

IN THE CLAIMS

1. (Previously presented) A method of performing transluminal mitral annuloplasty, comprising the steps of:
providing a catheter, having a prosthesis thereon;
inserting the catheter into the venous system;
transluminally advancing the prosthesis into the coronary sinus; and
rotating a component of the prosthesis to cause the prosthesis to exert a compressive force on adjacent atrial musculature.
2. (Previously presented) The method of Claim 1, further comprising the step of percutaneously accessing the venous system prior to the transluminally advancing step.
3. (Previously presented) The method of Claim 2, wherein the accessing step is accomplished by accessing one of the veins selected from the group consisting of internal jugular, subclavian and femoral veins.
- B, 4. (Previously presented) The method of Claim 1, further comprising the steps of first measuring the coronary sinus and then selecting an appropriately sized prosthesis prior to the inserting step.
5. (Previously presented) The method of Claim 1, further comprising the step of measuring hemodynamic function following the rotating step.
6. (Previously presented) The method of Claim 5, further comprising the steps of determining an ongoing drug therapy taking into account the post implantation hemodynamic function.
7. (Withdrawn) A method of providing a therapeutic compressive force against a tissue structure which is adjacent to a vessel wall, comprising the steps of positioning a device in the vessel; rotating at least a part of a forming element within the device to cause the device to exert a force against the wall of the vessel thereby exerting a force against the adjacent tissue structure; and deploying the device within the vessel.
8. (Withdrawn) A method as in Claim 7, wherein the positioning step is accomplished percutaneously.

Appl. No : 09/909,101
Filed : July 19, 2001

9. (Withdrawn) A method as in Claim 7, wherein the tissue structure comprises the mitral valve annulus.

10. (Withdrawn) A method as in Claim 7, wherein the tissue structure comprises the left ventricle.

11. (Withdrawn) A method as in Claim 7, wherein the vessel comprises a vein.

12. (Withdrawn) A method of performing annuloplasty of the mitral valve comprising positioning a prosthesis in the coronary sinus; rotating a first portion of the device with respect to a second portion of the device to cause the device to bend into an arcuate configuration to provide a compressive force on the mitral valve annulus; and securing the device in the arcuate configuration within the coronary sinus.

13. (Withdrawn) A method as in Claim 12, further comprising the step of percutaneously accessing the venous system prior to the positioning step.

B, 14. (Withdrawn) A method as in Claim 13, wherein the accessing step is accomplished by accessing one of the internal jugular, subclavian and femoral veins.

15. (Withdrawn) A method as in Claim 12, wherein the locking step comprises engaging a first threaded surface with a second threaded surface.

16. (Withdrawn) A method as in Claim 12, wherein the locking step comprises providing an interference fit.

17. (Withdrawn) A method as in Claim 12, wherein the locking step comprises providing an adhesive bond.

18. (Withdrawn) A method as in Claim 12, wherein the locking step comprises providing a knot.

19. (Withdrawn) A method as in Claim 12, wherein the locking step comprises providing a compression fit.

20. (Withdrawn) A method as in Claim 12, further comprising the steps of first measuring the coronary sinus and then selecting an appropriately sized prosthesis prior to the positioning step.

21. (Withdrawn) A method as in Claim 12, further comprising the step of measuring hemodynamic function following the rotating step.

Appl. No : 09/909,101
Filed : July 19, 2001

22. (Withdrawn) A method as in Claim 21, further comprising the step of determining an ongoing drug therapy taking into account the post implantation hemodynamic function.

23. (Previously presented) The method of Claim 1, wherein the rotating a component step causes the prosthesis to bend into an arcuate configuration.

24. (Previously presented) The method of Claim 23, further comprising the step of locking the prosthesis in the arcuate configuration.

25. (Previously presented) The method of Claim 24, wherein the locking step comprises engaging a first threaded surface with a second threaded surface.

26. (Withdrawn) The method of Claim 24, wherein the locking step comprises providing an interference fit.

27. (Withdrawn) The method of Claim 24, wherein the locking step comprises providing an adhesive bond.

28. (Withdrawn) The method of Claim 24, wherein the locking step comprises providing a knot.

29. (Withdrawn) The method of Claim 24, wherein the locking step comprises providing a compression fit.

30. (Previously presented) The method of Claim 1, further comprising the step of deploying the prosthesis in the coronary sinus.

31. (Previously presented) The method of Claim 30, further comprising the step of removing the catheter from the venous system.

32. (Previously presented) The method of Claim 1, additionally comprising the step of monitoring hemodynamic function to assess mitral valve regurgitation.

33. (Withdrawn) The method of Claim 32, wherein the monitoring step comprises monitoring hemodynamic function prior to the rotating step.

34. (Previously presented) The method of Claim 32, wherein the monitoring step comprises monitoring hemodynamic function during the rotating step.

35. (Withdrawn) The method of Claim 32, wherein the monitoring step comprises monitoring hemodynamic function following the rotating step.

Appl. No : 09/909,101
Filed : July 19, 2001

36. (Previously presented) The method of Claim 32, wherein the rotating step results in axially moving a forming element with respect to the prosthesis, to bend the prosthesis.

37. (Previously presented) The method of Claim 32, wherein the transluminally advancing step is accomplished using a catheter.

38. (Previously presented) The method of Claim 32, further comprising the steps of first measuring the coronary sinus and then selecting an appropriately sized prosthesis prior to the inserting step.

39. (Previously presented) The method of Claim 32, wherein the step of monitoring hemodynamic function is accomplished using transesophageal echo cardiography.

B, 40. (Withdrawn) The method of Claim 32, wherein the step of monitoring hemodynamic function is accomplished using surface echo cardiographic imaging.

41. (Withdrawn) The method of Claim 32, wherein the step of monitoring hemodynamic function is accomplished using intracardiac echo cardiographic imaging.

42. (Withdrawn) The method of Claim 32, wherein the step of monitoring hemodynamic function is accomplished using fluoroscopy with radiocontrast media.

43. (Withdrawn) The method of Claim 32, wherein the step of monitoring hemodynamic function is accomplished using left atrial or pulmonary capillary wedge pressure measurements.

44. (Previously presented) The method of Claim 32, further comprising the step of tightening the prosthesis to reduce regurgitation.

45. (Previously presented) The method of Claim 44, wherein the tightening step is performed to achieve at least a one grade reduction in regurgitation.

46. (Previously presented) A method of performing transluminal mitral annuloplasty, comprising the steps of:

providing a catheter, having a prosthesis thereon;

inserting the catheter into the venous system;

transluminally advancing the prosthesis into the coronary sinus;

Appl. No : 09/909,101
Filed : July 19, 2001

rotating a first component of the prosthesis with respect to a second component of the prosthesis; and

releasing the prosthesis from the catheter, such that the prosthesis exerts a force on the wall of the coronary sinus.

47. (Previously presented) The method of Claim 46, further comprising the step of percutaneously accessing the venous system prior to the transluminally advancing step.

48. (Previously presented) The method of Claim 47, wherein the accessing step is accomplished by accessing one of the veins selected from the group consisting of internal jugular, subclavian and femoral veins.

B, 49. (Previously presented) The method of Claim 46, further comprising the steps of first measuring the coronary sinus and then selecting an appropriately sized prosthesis prior to the inserting step.

50. (Withdrawn) The method of Claim 46, further comprising the step of measuring hemodynamic function following the rotating step.

51. (Previously presented) The method of Claim 50, further comprising the step of determining an ongoing drug therapy taking into account post implantation hemodynamic function.

52. (Previously presented) The method of Claim 46, further comprising the step of changing the shape of the prosthesis from an implantation configuration to a remodeling configuration in response to the rotating step.

53. (Previously presented) The method of Claim 52, wherein the prosthesis is reversibly movable between an implantation configuration for transluminal implantation and a remodeling configuration for exerting a force against a vessel wall.

54. (Previously presented) The method of Claim 52, wherein the prosthesis defines an arc when in the remodeling configuration.

55. (Previously presented) The method of Claim 54, wherein the changing the shape step comprises forming an arc which is concave in the direction of the mitral valve.

Appl. No : 09/909,101
Filed : July 19, 2001

56. (Previously presented) The method of Claim 54, wherein a best fit constant radius curve corresponding to the arc has a radius within the range of from about 10 mm to about 20 mm.

57. (Previously presented) The method of Claim 46, further comprising the step of retaining the body in a remodeling configuration following the rotating step.

58. (Previously presented) The method of Claim 57, wherein the retaining step comprises engaging a lock on the prosthesis.

59. (Withdrawn) The method of Claim 58, wherein the lock comprises an interference fit.

60. (Withdrawn) The method of Claim 58, wherein the lock comprises a ratchet.

61. (Withdrawn) The method of Claim 58, wherein the lock comprises an engagement surface, which is movable between a first, disengaged configuration and a second, engaged configuration.

62. (Previously presented) The method of Claim 58, wherein the lock is biased in a locked direction.

63. (Previously presented) The method of Claim 58, wherein the lock is biased in an unlocked direction.

64. (Previously presented) The method of Claim 46, further comprising a coating on the prosthesis.

65. (Previously presented) The method of Claim 46, further comprising the step of deploying an anchor for retaining the prosthesis at a deployment site within a vessel.

66. (Withdrawn) The method of Claim 65, wherein the anchor comprises a distal extension of the implant.

67. (Withdrawn) The method of Claim 65, wherein the anchor comprises a friction enhancing surface structure for engaging the wall of the vessel.

68. (Previously presented) The method of Claim 65, wherein the deploying an anchor step comprises deploying at least one barb for piercing the wall of the vessel.

69. (Previously presented) The method of Claim 46, wherein the prosthesis has an axial length of no more than about 10 cm.

70. (Previously presented) The method of Claim 46, wherein the maximum cross sectional dimension through the implant is no more than about 10 mm.

71. (Previously presented) The method of Claim 46, additionally comprising the step of monitoring hemodynamic function to assess mitral valve regurgitation.

72. (Withdrawn) The method of Claim 71, wherein the monitoring step comprises monitoring hemodynamic function prior to the rotating step.

73. (Previously presented) The method of Claim 71, wherein the monitoring step comprises monitoring hemodynamic function during the rotating step.

B. 74. (Withdrawn) The method of Claim 71, wherein the monitoring step comprises monitoring hemodynamic function following the rotating step.

75. (Previously presented) The method of Claim 46, further comprising the step of locking the prosthesis to retain a compressive force on the annulus following the manipulating step.

76. (Previously presented) The method of Claim 71, wherein the step of monitoring hemodynamic function is accomplished using transesophageal echo cardiography.

77. (Withdrawn) The method of Claim 71, wherein the step of monitoring hemodynamic function is accomplished using surface echo cardiographic imaging.

78. (Withdrawn) The method of Claim 71, wherein the step of monitoring hemodynamic function is accomplished using intracardiac echo cardiographic imaging.

79. (Withdrawn) The method of Claim 71, wherein the step of monitoring hemodynamic function is accomplished using fluoroscopy with radiocontrast media.

80. (Withdrawn) The method of Claim 71, wherein the step of monitoring hemodynamic function is accomplished using left atrial or pulmonary capillary wedge pressure measurements.

81. (Previously presented) The method of Claim 71, further comprising the step of determining an ongoing drug therapy taking into account post implantation hemodynamic function.